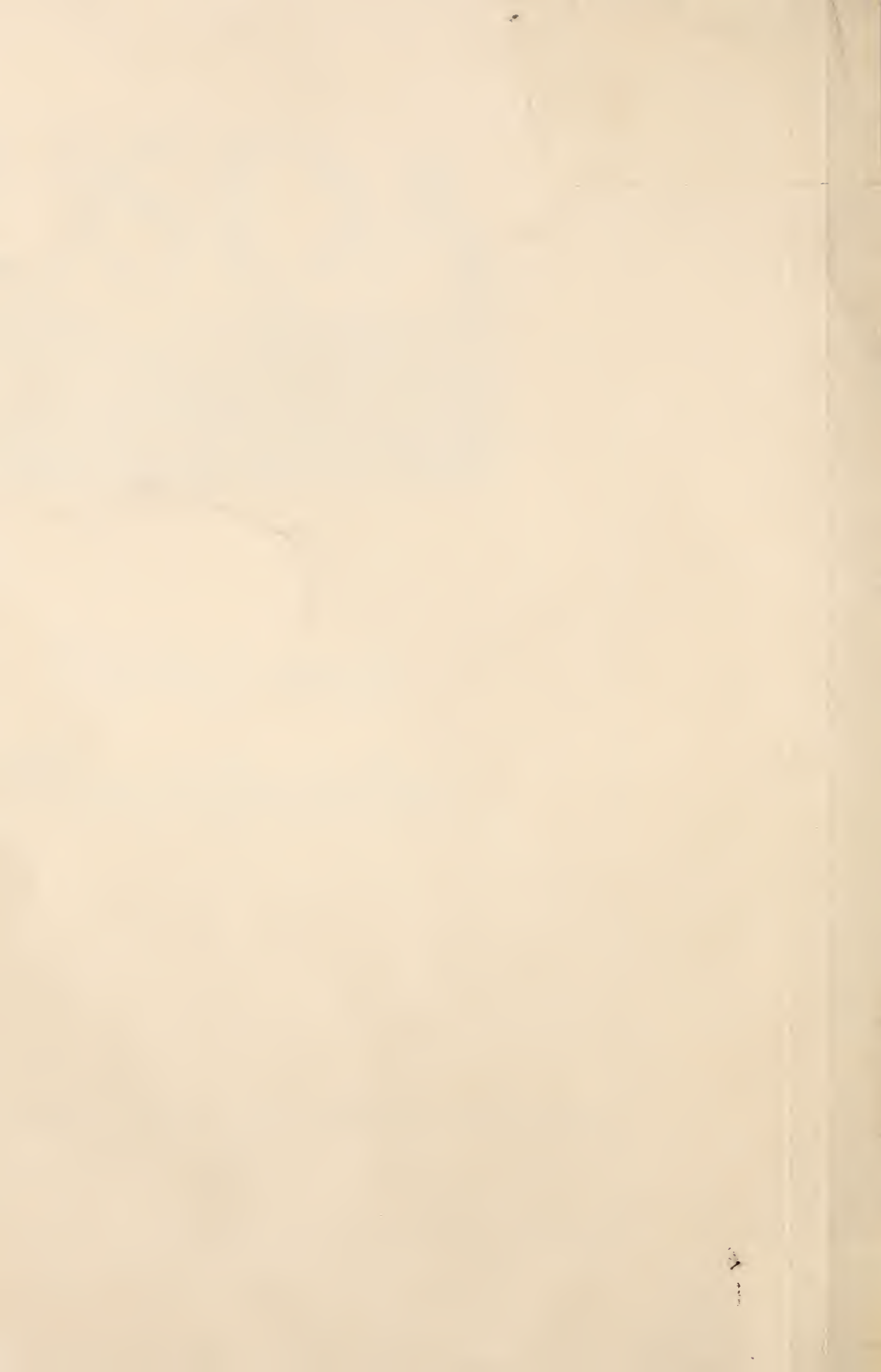


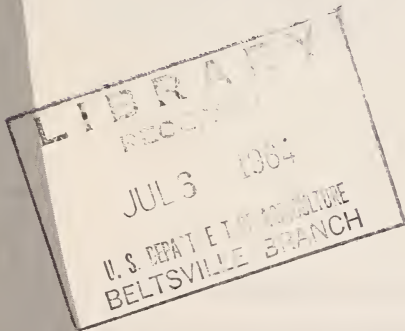
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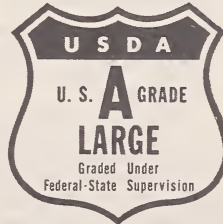


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# SHELL EGG GRADING and INSPECTION of EGG PRODUCTS



PRODUCED and MARKETING  
under FEDERAL - STATE  
QUALITY CONTROL PROGRAM



AGRICULTURAL MARKETING SERVICE,  
UNITED STATES DEPARTMENT OF AGRICULTURE  
— Washington, D. C.

## PREFACE

This bulletin presents information on the grading of shell eggs and the inspection of egg products. It describes the need for and the trend toward uniform standards and grades nationwide, and explains the Federal-State grading and inspection programs for such products.

To market eggs effectively and to the greatest advantage to producers, consideration must be given to consumer reaction on size, cleanliness of shells, and interior quality of shell eggs, and to the wholesomeness and functional quality of egg products.

To adequately reward producers and create an incentive for producing and delivering clean, unbroken eggs of good interior quality, eggs should be purchased by quality grade and weight class at proper price differentials.

The information in this bulletin should stimulate thought on means of developing a greater coordination of effort in improving practices in the marketing of eggs and egg products. It is intended to aid Federal, State, and industry leaders who are encouraging the use of uniform standards and grades for eggs. It will also aid agencies responsible for consumer education in preparing information on inspected and graded shell eggs and egg products in line with existing conditions.

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# **SHELL EGG GRADING and INSPECTION OF EGG PRODUCTS**

*Poultry Division, Agricultural Marketing Service <sup>1</sup>*

## **INTRODUCTION**

Modern merchandising has brought about many changes in the marketing of eggs. The growing demand for eggs of uniform quality and weight has encouraged grading. Consumers are willing to pay necessary price differentials for better-than-average quality and for larger size.

The necessity of adequately reimbursing producers for high-quality eggs has become more acute due to the increase in size and numbers of commercial flocks. Producers with large flocks are more conscious of net returns and those with high-quality eggs are sought after by country assembly plants which are more and more tending to grade and carton eggs for immediate distribution into consumer channels.

Since many of the former marketing steps are performed at one point, the time between production and delivery to the consumer is reduced greatly. This results in better-quality eggs in retail channels.

## **PART I**

### **SHELL EGGS**

The grading and classing of eggs is a process of sorting them according to quality and weight. Grades define the limit of tolerance for error in measuring the factors involved in establishing the standard of quality of an individual egg. To be practical, consideration must also be given to the differences which arise between graders when applying subjective measurements and for normal changes in quality in the marketing channel.

Weight classes define the minimum weight of individual eggs and the minimum average weight of the eggs contained in a dozen, case or lot.

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<sup>1</sup> Earlier bulletins on this subject were written by Lester Kilpatrick and T. H. Pond. This bulletin was prepared by H. Connor Kennett, Jr., and Jerald C. Fitzgerald, marketing specialists, Poultry Division, AMS.



## Marketing Practices

The majority of our egg production passes through one or more marketing channels. However, some producers market their entire production directly to the consumer.

Whether the eggs move directly or indirectly, it is necessary to have a basis for establishing values. The producer marketing his eggs directly may find that sorting the eggs by weight is sufficient to satisfy his customer. That is possible because under good production methods there is a high degree of uniformity in the other factors which establish the value of his product when the eggs are properly handled and marketed within a few days. It is generally considered good practice for the producer to remove soiled, cracked, and misshapen eggs and to candle the eggs to remove those containing unsightly material such as blood spots and occasional inedible eggs.

From the time eggs began to move in commercial channels, there has been some point between the producer and the consumer where an examination has been made in an effort to determine their value. Such examination might have been for weight, cleanliness, soundness of shell or color of shell. It soon became evident, however, that consumers had to be satisfied with the broken-out appearance of the eggs if the egg industry was to meet the competition of other food products. Some buyers used a water test to determine the loss of water from the egg. Eggs with large air cells tended to stand on end.

Candling is now, and for many years has been, the accepted method for determining interior quality of eggs. In addition, the U.S. Department of Agriculture promulgated standards and grades whereby small samples of eggs from selected flocks are broken out and the albumen quality is determined by measuring the height of the thick albumen. Statistical analysis has proven that eggs from a flock of one strain of layers which are of uniform age will be consistently more uniform in quality than eggs from flocks of various strains and ages which have been sorted for quality by candling.

The albumen height measurements from thousands of eggs were analyzed, and it was found that a sample of 5 or 10 eggs from such flocks was an accurate basis for evaluating the important factor of albumen quality. The grades and standards promulgated for use by this method of testing are predicated on requirements for the producer with regard to farm practices affecting egg quality, such as cooling.

## Grading for Quality

Quality and value in eggs depend on the basic factors which apply to all foods; namely, nutritive value, convenience, wholesomeness, functional properties, and acceptability. These factors are listed in order of increasing variability among eggs. Eggs do not vary much in nutritive value, but they vary a great deal in acceptability.

All eggs sold to consumers should be graded to determine their quality, to make certain that only good eggs reach consumers, and to enable consumers to purchase the quality desired. Quality is determined by four primary factors: Condition of the yolk, clarity and thickness of the white, texture and condition of the shell, and condition and size of the air cell.

The most common method of evaluating these factors is by use of a suitable candling light in a darkened room. Such a device is equip-

ped with an aperture through which light is concentrated and before which the egg is twirled to examine the interior quality. It also has an opening at the bottom to provide light under which the eggs can be examined for shell cleanliness and abnormalities. The combination of candling by hand or over multiple lights on conveyors, together with measuring the albumen height from a small sample from each flock, is rapidly gaining in popularity.

The grading of shell eggs involves the classifying of the individual egg according to established standards. The distinction between standards of quality and grades should be understood.

Standards of quality refer to a factor or group of factors which indicate the relative degree of excellence of one unit of product. They are the means of classifying each egg according to various groups of conditions and characteristics that research and experience have shown to be related to consumer preference and acceptance.

Grade identification is applied to groups of eggs such as dozens or cases. Grades provide tolerances for a small percentage of eggs below the stated quality.

Producers and egg handlers should be familiar with the standards and grades specified in the laws of the State in which the eggs are to be sold. Copies of State egg laws should be obtained from the State division of markets or State department of agriculture and should be studied carefully.

## **Some Effects of Marketing Eggs According to Uniform Grades**

Selling eggs on a graded basis makes producers more conscious of the factors in production which influence quality and size, as well as the factors which have a bearing on the rate of deterioration of the quality in eggs. There is a direct correlation of egg weight and quality to the price received for eggs when sold on a graded basis. There is abundant evidence that the better-than-average producer obtains higher returns by selling eggs on a graded basis.

Some advantages of marketing eggs on a graded basis may be stated briefly as follows:

### **To Producer**

1. Encourages production of higher quality eggs.
2. Stimulates improvement in flock management.
3. Reflects the economic significance of egg weight.
4. Increases returns to producers of better-quality eggs.
5. Furnishes a reliable basis for evaluating market price reports.

### **To Central Assembly Plants**

1. Provides basis for developing a quality improvement program.
2. Lowers procurement and handling costs.
3. Attracts producers of high quality eggs.
4. Facilitates direct sale to retail distributing agencies.

### **To Wholesalers and Jobbers**

1. Provides a reliable basis for determining egg value.
2. Reduces costs of handling.
3. Reduces effort and costs in retaining old accounts and securing new ones.

4. Makes it possible to pay and obtain higher prices for uniform quality packs.
5. Eliminates need for personal inspection of product.

#### **To the Retailer**

1. Reduces handling costs.
2. Enables the purchasing of quality and size to meet consumer's preference.
3. Encourages the use of refrigeration for maintaining quality.
4. Makes possible more effective merchandising by displays and advertising.
5. Establishes a reliable basis for brand names.
6. Aids in attracting and holding regular customers.

#### **To the Consumer**

1. Provides assurance of the quality and weight as stated.
2. Permits selection of desired quality and weight.
3. Provides basis for evaluating consumer information on uses.
4. Helps in evaluating variable prices listed.

### **Need for Uniform Terminology of Standards and Grades on a National Basis**

Since a large part of the eggs produced move a considerable distance from the point of production, it would seem to follow that the function of grading can best be performed if the grades and standards used are the same in all areas of the United States. Price information as published in Market News reports and advertisements cannot be compared except on the basis of known quality and weights. They cannot be compared unless the product can be described. Grades are the "shorthand" for such description.

To be most effective, a uniform system must be employed. Industry leaders are working continuously toward this goal. When a nationally produced and nationally used commodity can be described and discussed in uniform terms, confidence in trading results. Educational programs on grades are more easily planned and executed, and they contribute larger benefit to the entire industry. Also, brand names can be more easily established and their reputation strengthened.

The use of uniform grade standards and terminology does not suggest elimination of trade brands nor conflict with the use of them in any way. Trade brands should be used in conjunction with uniform grade identification to enhance good merchandising effort. They tend to increase pride on the part of the person or firm packing and selling eggs and confidence of the wholesale and retail dealers and consumers in the grading skill, efficiency, and integrity of the packers.

The various qualities of eggs when packed under uniform standards and grades more readily find the most suitable market outlets. This can materially reduce distribution costs and give greater consumer understanding and satisfaction.

Considerable progress has been made in establishing uniformity in standards, grades, and weight classes since 1925. There is continued interest on the part of State marketing officials, consumer groups, and industry members in continuing the work toward adoption of national standards and grades.



Egg laws have been enacted in all of the 50 States. Most of the recent laws, and the revisions of the older laws, are concerned with grading, grade labeling, and accurate representation of the product to the consumer at the retail level. Most of the enforcement effort is directed toward retail outlets, although eggs are also inspected at the wholesale and jobbing levels.

The National Association of State Departments of Agriculture and the National Association of Marketing Officials appointed a committee in 1962, which has held several joint meetings for the purpose of formulating a "Model Egg Law." If adopted this will provide even more uniform standards, grades, and labeling requirements, and will facilitate to a greater degree the free movement of shell eggs between States and areas.

## **How the U.S. Standards and Grades Were Developed**

In 1923 the Department of Agriculture began developing standards and grades for shell eggs. This was considered necessary because of the confusion and misunderstanding that arose from the use of classifying terms indicative of the locality of production and hence suggestive of possible quality, such as Midwestern Extra, Pacific Coast Whites, and Nearby Hennerly Whites. The first standards were introduced in tentative form and sent out to the trade in 1925.

The standards have been revised periodically up to the present time on the average of every 4 or 5 years. Representatives of producers, retailers, jobbers, wholesalers, and consumers are advised of proposed changes in the regulations and are given an opportunity to express their views. The suggestions received are carefully reviewed before making them a part of the regulation. Basically, these standards and grades have not varied to any great extent from those originally proposed; but minor changes have been made from time to time to keep pace with developments in egg marketing and new information.

A modification in the standards effective since December 1, 1946, was made on March 1, 1955. The change eliminated "stained" eggs as a separate quality classification, and included in varying proportions eggs with stained or soiled shells in "B," "C," and "Dirty" qualities, depending on the intensity and area of the stain.

An amendment effective September 15, 1959, initiated the "Quality Control Program" whereby interior egg quality is determined by a breakout test, and established a new grade which is known as "Fresh Fancy Quality." This amendment also established new Export Grades that are similar to the Procurement Grades, with the exception of packaging requirements.

Amendments to the regulations effective August 1, 1963, eliminated yolk centering as a factor of interior egg quality, raised the minimum requirements for the moving Haugh unit average for eggs packed under the Quality Control Program, raised the minimum standards for A quality eggs to 60 Haugh units, and changed the air cell depth to  $\frac{3}{16}$ -inch maximum for an A-quality egg, and eliminated the C grade for eggs packed under the consumer grade.

In issuing national standards for eggs, the U.S. Department of Agriculture acts as a coordinating agency, with responsibility primarily for reflecting research developments and consolidating the ideas and recommendations of all interested groups, as a service to the poultry industry and especially to producers.

In order to be satisfactory, standards and grades must be understood by producer and market men alike. They must have a common meaning and they should be coordinated on a national basis to assure uniformity.

## **The United States Standards and Grades**

The United States Standards for Quality of Individual Shell Eggs are applicable only to eggs of the domesticated chicken that are in the shell. The grades are applicable to shell eggs in "lot" quantities, rather than on an "individual" egg basis. A lot may consist of a dozen, or larger quantity.

### **Standards for Quality of Individual Shell Eggs**

The quality standards for individual shell eggs are the foundation for the whole program of standardization. They provide for seven qualities. They are: AA Quality and A Quality, which must have clean, sound shells, and B Quality and C Quality, which may be clean or slightly to moderately stained. The other three qualities are: Dirties, Checks, and Leakers.

Explanation of terms descriptive of the four primary quality factors and a more detailed discussion of these standards can be found in the Regulations Governing the Grading of Shell Eggs and United States Standards, Grades and Weight Classes for Shell Eggs. A summary of the specifications for each quality factor is given in table 1.

### **Grade Tolerances**

Officially graded eggs shall conform as nearly as possible to the specifications of the respective standards of quality. It is not possible with present equipment to do a perfect job at practical operating speeds of sorting qualities so that each lot will contain 100 percent of the quality designated. However, the grader must make every effort to do so in order that the tolerance permitted will not be exceeded.

For example, although U.S. Grade A provides for a maximum tolerance of 20 percent eggs below A Quality, the grader must strive to include no eggs below A Quality in order to assure delivery of Grade A eggs to the receiver. This is necessary because there is a constant loss in quality even under the best practical handling conditions. This loss in quality can be minimized materially under favorable temperature and moisture conditions.

Tolerances are permitted within each grade only as an allowance for variable efficiency and interpretation of conscientious graders, normal changes under favorable conditions during reasonable periods between grading and reasonable variation from grader's interpretation. Substitution of higher qualities for those specified is permitted.

Tolerances allowed for lower qualities in wholesale grades are greater than is acceptable for retail trading and include tolerances for loss which are not included in the consumer grades. A carload or truckload of eggs usually contains considerable variation in quality, and wholesale grades allow for this.

TABLE 1.—*Summary of United States Standards for Quality of Individual Shell Eggs*

SPECIFICATIONS FOR EACH QUALITY FACTOR

Quality Factor	AA Quality	A Quality	B Quality	C Quality
Shell-----	Clean. Unbroken. Practically normal.	Clean. Unbroken. Practically normal.	Clean; to very slightly stained. Unbroken. May be slightly abnormal.	Clean; to moderately stained. Unbroken. May be abnormal.
Air cell----	$\frac{1}{8}$ inch or less in depth. Practically regular.	$\frac{3}{16}$ inch or less in depth. Practically regular.	$\frac{3}{8}$ inch or less in depth. May be free or bubbly.	May be over $\frac{3}{8}$ inch in depth. May be free or bubbly.
White-----	Clear. Firm. (72 Haugh units or higher.)	Clear. May be reasonably firm. (60–71 Haugh units.)	Clear. May be slightly weak. (31–59 Haugh units.)	May be weak and watery. Small blood clots or spots may be present. <sup>1</sup> (Less than 31 Haugh units.)
Yolk-----	Outline slightly defined. Practically free from defects.	Outline may be fairly well defined. Practically free from defects.	Outline may be well defined. May be slightly enlarged and flattened. May show definite but not serious defects.	Outline may be plainly visible. May be enlarged and flattened. May show clearly visible germ development but no blood. May show other serious defects.

<sup>1</sup> If they are small (aggregating not more than  $\frac{1}{8}$  inch in diameter).

For eggs with dirty or broken shells, the standards of quality provide three additional qualities. These are:

Dirty	Check	Leaker
Unbroken. May be dirty.	Checked or cracked but not leaking.	Broken so contents are leaking.

### Consumer Grades

Consumer grades are intended primarily for application to lots of eggs that have been carefully candled and graded for retail sale. As the name implies, eggs graded and identified as a consumer grade are suitable for immediate use without further handling. These grades are also widely used by hospitals, restaurants and other group feeding establishments which purchase eggs in case lots.

The identification of eggs by consumer grades has become more extensive as a result of the enactment of laws by a number of States



requiring eggs to be sold at retail on a graded basis. No inedible eggs are permitted in consumer grades.

There are three consumer grades for eggs; namely, U.S. Grade AA or Fresh Fancy Quality, U.S. Grade A, and U.S. Grade B. These grades differ from the U.S. Wholesale Grades primarily in stricter tolerance of not over 20 percent for eggs below the major specified quality and in providing no tolerance for inedible or "loss" eggs. A summary of standards for U.S. Consumer Grades for Shell Eggs is given in table 2. The tolerances for individual cases or cartons within a lot of consumer grade shell eggs are shown in table 3.

The weight classes applicable to the U.S. Consumer Grades for Shell Eggs are: Jumbo, Extra Large, Large, Medium, Small, and Peewee (table 4).

The grade letters indicate quality only. The weight class is stated separately and indicates the weight of the dozen in ounces, or of the 30-dozen case in pounds. A Grade A egg has the same quality, whether it is small or large. Grade A eggs are not necessarily large; Grade AA eggs are not necessarily extra large, and Grade B eggs are not necessarily medium or small.

TABLE 2.—*Summary of U.S. Consumer Grades for Shell Eggs*

U.S. consumer grade	At least 80 percent (lot average) <sup>1</sup> must be—	Tolerance permitted <sup>2</sup>	
		Percent	Quality
Grade AA or Fresh Fancy Quality.	AA quality-----	15 to 20----- Not over 5 <sup>3</sup> ----	A. B, C, or Check.
Grade A-----	A quality or better----	15 to 20----- Not over 5 <sup>3</sup> ----	B. C or Check.
Grade B-----	B quality or better----	10 to 20----- Not over 10 <sup>3</sup> ----	C. Dirty or Check.

<sup>1</sup> In lots of 2 or more cases or cartons, see table 3 of this section for tolerances for individual case or carton within a lot.

<sup>2</sup> Within tolerance permitted, an allowance will be made at receiving points or shipping destination for ½ percent leakers in Grades AA, A, and B.

<sup>3</sup> Substitution of higher qualities for the lower qualities specified is permitted.

TABLE 3.—*Tolerance for Individual Case or Carton Within a Lot*

U. S. consumer grade	Case—minimum quality—percent <sup>1</sup>	Carton—minimum quality—number eggs <sup>1</sup>
Grade AA or Fresh Fancy Quality.	70% AA-----	8 eggs AA.
	20% A-----	2 eggs A.
	10% B, C, or Check----	2 eggs B, C, or Check.
Grade A-----	70% A-----	8 eggs A.
	20% B-----	2 eggs B.
	10% C or Check----	2 eggs C or Check.
Grade B-----	70% B-----	8 eggs B.
	10% C-----	2 eggs C.
	20% Check or Dirty----	2 eggs Check or Dirty.

<sup>1</sup> Substitution of higher qualities for lower qualities specified is permitted.



TABLE 4.—*U.S. Weight Classes for Consumer Grades for Shell Eggs*  
(Applicable to All Consumer Grades)

Size or weight class	Minimum net weight per dozen	Minimum net weight per 30 dozen	Minimum weight for individual eggs at rate per dozen <sup>1</sup>
	<i>Ounces</i>	<i>Pounds</i>	<i>Ounces</i>
Jumbo.....	30	56	29
Extra Large.....	27	50½	26
Large.....	24	45	23
Medium.....	21	39½	20
Small.....	18	34	17
Pee wee.....	15	28	-----

<sup>1</sup> Minimum weights listed for individual eggs at the rate per dozen are permitted in various size classes only to the extent that they will not reduce the net weight per dozen below the required minimum.

### Wholesale Grades

The U.S. Wholesale Grades are intended for use in wholesale channels of trade. They differ from consumer grades in that they provide a tolerance for a small percentage of "loss," or inedible eggs. They are applicable to both carlot and less than carlot shipments as packed at shipping points, or as received at terminal wholesale and distributing markets.

The principal value of wholesale grades is to describe the inherent quality of large commercial lots of eggs on the basis of potential yield of completely graded edible eggs.

These grades are of primary interest to dealers of eggs in large volume, rather than to producers. They also serve the interests of the producers in that their use promotes egg standardization and tends to improve the general quality of eggs in commerce and even the quality which the consumer receives. At various times, the wholesale grades have been used for trading on mercantile exchanges.

During World War II and since then, the Chicago Mercantile Exchange and the New York City Mercantile Exchange have used U.S. Standards of Quality as a basis for trading grades, which rather closely conform to the U.S. Wholesale Grades. The four grades of Specials, Extras, Standards, and Trades are based upon stated percentages of AA, A, B, and C Quality of eggs, respectively (table 5).

In the U.S. Wholesale Grades, tolerances for eggs below the major specified quality and for inedible eggs or "loss" are permitted to allow for deterioration in transit and unavoidable human errors in grading which are likely to occur when eggs are candled at a rate of speed necessary in a commercial operation.

The weight classes for U.S. Wholesale Grades for Shell Eggs are practically identical with the weight classes for the consumer egg grades (table 6). They are subject to a stated tolerance of 10 percent and apply to all wholesale grades, except U.S. Dirties and U.S. Checks. There are no weight classes for U.S. Dirties or U.S. Checks.



TABLE 6.—*Weight Classes for United States Wholesale Grades for Shell Eggs*

Weight classes	Per 30 dozen eggs		Weights for individual eggs at rate per dozen	
	Average net weight on a lot <sup>1</sup> basis	Minimum net weight individual case <sup>2</sup> basis	Minimum weight	Weight variation tolerance for not more than 10 percent, by count, of individual eggs
Extra large-----	At least— 50½ pounds----- 45 pounds----- 39½ pounds----- 34 pounds-----	50 pounds-----	26 ounces-----	Under 26 but not under 24 ounces.
Large-----		44 pounds-----	23 ounces-----	Under 23 but not under 21 ounces.
Medium-----		39 pounds-----	20 ounces-----	Under 20 but not under 18 ounces.
Small-----		None-----	None-----	None.

<sup>1</sup> Lot means any quantity of 30 dozen or more eggs.

<sup>2</sup> Case means standard 30 dozen egg case as used in commercial practice in the United States.

## Procurement Grades

The U.S. Procurement Grades are applicable only to shell eggs in lot quantities. They are designed primarily for institutional procurements and are used extensively by governmental, as well as private institutions. Most of the armed service procurement is based on these grades.

TABLE 7.—*Summary of U.S. Procurement Grades for Shell Eggs*

U.S. Procurement Grade	A quality or better (lot average) at least <sup>1</sup>	Maximum tolerance permitted <sup>2</sup> (lot average)	
	Percent	Percent	Quality
I-----	80	15 to 20----- Not over 5-----	B. C, Check, Dirty, Leaker, and Loss.
II-----	60	30 to 40----- Not over 10-----	B. C, Check, Dirty, Leaker, and Loss.
III-----	40	48.3 to 60----- Not over 11.7-----	B. C, Check, Dirty, Leaker, and Loss.
IV-----	20	68.3 to 80----- Not over 11.7-----	B. C, Check, Dirty, Leaker, and Loss.

<sup>1</sup> Individual cases may contain not over 10 percent less A quality eggs than permitted for the lot, provided the average for the lot is not more than the tolerance permitted in any grade. In lots of 200 cases or more, 1 case in each 10 examined may contain not over 20 percent less A quality eggs than is permitted in any grade.

<sup>2</sup> Within each tolerance for qualities below B, each of the grades may contain not over 3 percent Checks, and a combined total of not over  $\frac{3}{10}$  percent Dirties, Leakers, and Loss. Loss other than meat spots and blood clots and spots must not exceed 0.15 percent at origin and 0.20 percent at destination. Individual cases of Procurement Grades I, II, III, and IV may contain not over 10 percent, 15 percent, 18 percent, and 18 percent, respectively, of qualities below Grade B provided the average for the lot does not exceed the tolerance permitted in the grade.

TABLE 8.—*Weight Classes for United States Procurement Grades*

Weight classes	Average net weight on lot basis 30-dozen case	Minimum net weight individual 30-dozen case	Minimum net weight of individual eggs at rate per dozen	Maximum average percent of individual eggs below minimum weight lot average <sup>1</sup>
	<i>Pounds</i>	<i>Pounds</i>	<i>Ounces</i>	<i>Percent</i>
Extra large-----	50. 5	50	26	3. 33
Large-----	45	44. 5	23	3. 33
Medium-----	39. 5	39	20	3. 33
Small-----	34	33. 5	17	3. 33

<sup>1</sup> Individual cases may contain not over 10 percent of individual eggs below minimum weights specified in any weight class, but such eggs shall weigh not less than the minimum specified for the next lower weight class.



## Export Grades

The U.S. Export Grades are provided for voluntary use by shell egg exporters. These grades are similar to the U.S. Procurement Grades. Eggs graded and labeled as an export grade must be packed in new standard cases and new standard packing material. Each case must be plainly marked in English and in the language of the importing country to show the name of the product, the quantity, and the size. When the importing country requires marking on the individual egg, such marking must be legible.

The weight classes for U.S. Export Grades for Shell Eggs are the same as the weight classes for the Procurement Grades as indicated in table 8.

TABLE 9.—*Summary of U.S. Export Grades for Shell Eggs*

U.S. export grade	A quality or better (lot average) at least <sup>1</sup>	Maximum tolerance permitted <sup>2</sup> (lot average)	
	Percent	Percent	Quality
I or A----	80	{15 to 20----- {Not over 5-----	B. Edible eggs below B quality.
II-----	60	{30 to 40----- {Not over 10-----	B. Edible eggs below B quality.
III-----	40	{48.3 to 60----- {Not over 11.7-----	B. Edible eggs below B quality.
IV-----	20	{68.3 to 80----- {Not over 11.7-----	B. Edible eggs below B quality.

<sup>1</sup> Individual cases may contain not over 10 percent less A quality eggs than permitted for the lot: *Provided*, that the average for the lot is not more than the tolerance permitted in any grade. In lots of 200 cases or more, 1 case in each 10 examined may contain not over 20 percent less A quality eggs than is permitted in any grade.

<sup>2</sup> Within each tolerance for qualities below B, each of the grades may contain not over 3 percent Checks, and a combined total of not over  $\frac{3}{10}$  percent Dirties, Leakers, and Loss. Loss must not include inedible eggs. Individual cases of U.S. Export Grades I or A, II, III, and IV may contain not over 10 percent, 15 percent, 18 percent, and 18 percent respectively, of qualities below B provided the average for the lot does not exceed the tolerance permitted in the grade.

## The Federal-State Grading Program

The U.S. Department of Agriculture offers a grading service to the egg industry that has become an important factor in marketing. The service is available on a voluntary and practically self-supporting basis.

The program provides for the cooperation of various State departments of agriculture and the extension services of the State colleges. Grade identification or grade labels in those States may use the phrase "Federal-State Graded."

Impartial grading and consistent and uniform interpretation of standards and grades together form the most important features for the success of Government grading. Whether grading is done in

cooperation with a State agency or directly by the U.S. Government, it is referred to as "official grading."

The Federal-State Egg Grading Service is a cooperative arrangement between the U.S. Department of Agriculture and a State or other agency for the primary purpose of furnishing producers, processors, and others an impartial egg-grading service based on official national standards and grades. An agreement signed by the cooperating parties sets forth the procedures and methods to be followed in conducting the program. These services are operated on a voluntary basis and are supported almost entirely by fees charged the users.

Service to egg producers can be furnished more economically at the point of the first receiver or the assembly plant. To obtain grading service which provides for resident or continuous service at the packing plant, the applicant arranges with the officer in charge of the Federal-State Grading Service for the services of a grader trained to grade eggs according to official standards.

This grader checks the accuracy of the quality determinations of the candlers and certifies that eggs bearing official identification are of the grade designated. This policy assures a maximum uniformity of grades of eggs marketed by the users participating in the service. Fees to be charged for any resident grading service are specified in the Regulations and cooperative agreements.

Resident graders classify eggs as consumer grades, procurement grades, and wholesale grades, or according to contract specifications. When eggs are classified as consumer grades to be packaged with official identification, each individual egg is candled for quality and sorted for weight by a licensed grader, or by a limited licensee. All eggs which are graded by a limited licensee are check-graded by a grader.

Wholesale grades are usually determined by examining each egg in a representative sample out of each lot. The size of the sample depends on the number of cases and the uniformity or lack of uniformity in the lot. A 5-case sample is the minimum number of cases comprising a representative sample for a lot of 51 to 100 cases. From each sample selected, 100 eggs are examined.

Procurement grades are generally graded on a representative sample basis. A lot may contain any quantity of one or more cases or cartons.

The grading services are also provided on a fee basis at a cost to the user of the service that is in relation to the time expended or the volume of eggs graded. Fee grading service may be provided at any place in the marketing channels.

The extent of the use of the service can best be illustrated by the fact that in the early part of 1963, over 300 firms were using the resident type of grading service for shell eggs.

To be officially identified in 1-dozen cartons, eggs must be candled and sorted under the supervision of a licensed Federal-State grader. To be eligible to be licensed as a Federal-State grader, a person must be a Federal or State employee possessing proper qualifications to perform grading service as determined by an examination for competency. He must not have a financial interest in any product which he is to sample or grade.

## Use and Growth of the Federal-State Egg Grading Service

Official grading of shell eggs is done extensively at shipping point assembly plants, and includes both wholesale carlot grading and grading of eggs packed in cartons of one dozen eggs each for direct distribution to retail stores. Grading for both purposes also is done in the terminal markets and to a limited extent at producer's premises. Egg handlers often request gradings of eggs in carlots and less than carlots, using the official grading certificates as an aid in making sales, or in learning the quality of a particular lot.

When Government grading is used, the buyer knows what he is buying without seeing it. Buyers, therefore, have more confidence when making their purchases, and producers and shippers have an expert, unbiased appraisal and certification of quality in offering eggs for sale when they are officially graded.

When disputes arise between buyer and seller the shipper, as well as the receiver, has recourse to an official grading of the eggs at terminal markets as part of the Federal-State grading service.

At storage warehouses, eggs are often graded by Federal-State graders before they are placed in storage and as they leave the warehouse. Official egg quality standards and weight classes are used as a basis for spot and futures trading on the Mercantile Exchanges of Chicago and New York.

Eggs purchased on contract by private institutions, such as hotels, hospitals and steamship lines, are frequently graded by Federal-State graders and usually in terminal markets. The grading service is also used by the Veterans' Administration and our Armed Forces.

Table 10 shows the progressive changes in volume of eggs graded under Federal and Federal-State grading programs and the relation to farm sales of shell eggs available for market for the years 1940 to 1962.

It is interesting to note the growth of the service by comparing the volume and the percentage of shell eggs officially graded in the past with more recent volume figures. Prior to World War II, less than 2 percent of sales available for market were graded under these programs. The most rapid expansion occurred during World War II in connection with Government buying programs for the Armed Forces (fig. 1).

The use of the services and the volume of products inspected and graded continued to expand after the cessation of hostilities. This expansion was due in part to the fact that firms had had experience with Federal-State grading and inspection programs and were continuing to use them in their processing and marketing programs. In 1962, there were 34,516,225 cases officially graded, which was about 25 percent of farm sales available for market.

The State of Iowa in its Federal-State Grading Program for Shell Eggs ranks first in volume of grading services rendered with 5,091,465 cases graded during 1962; Minnesota second, with 4,930,259 cases graded; Ohio third, with 3,633,163 cases graded; Texas fourth, with 1,671,658 cases graded; and Wisconsin fifth, with 1,540,237 graded.

Table 11 gives the production and sales by farmers and the volume of shell eggs officially graded by States during the year 1962.

Although the volume of eggs graded under Federal and Federal-State programs is still relatively small in relation to sales of eggs available for market, the influence of Federal grades is far greater than the volume data indicated.



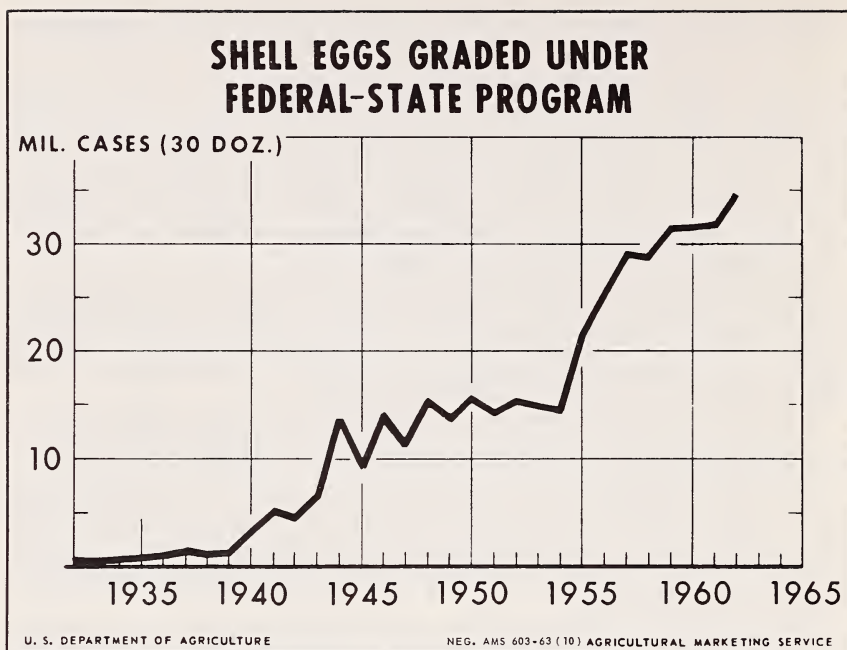


FIGURE 1.—The quantity of shell eggs graded under Federal-State programs increased from 5 million cases in 1941 to more than 34 million cases in 1962.

Most of the State departments of agriculture use the USDA Standards and Grades for shell eggs as a basis for developing their grade labeling requirements in their state egg laws.

### Egg Grading and Marketing Schools

The Poultry Division of USDA's Agricultural Marketing Service cooperates with the Northeastern Poultry Producers Council and the Southeastern Poultry and Egg Association in conducting egg grading and quality schools during the month of June. The sites of the schools are rotated each year. The schools have become of national interest, and egg candlers and egg room supervisors come from many parts of the country to attend. The teaching staffs are made up of practical businessmen, teachers, and officials with years of experience.

### New Developments in Egg Quality Standardization

The rapid increase in the number of large laying flocks has opened the door for the commercial development of new and better ways of standardizing shell egg quality, and of more accurate and objective ways of determining and certifying that quality.

The "Quality Control" egg grading program developed and administered by the Poultry Division provides for Government certification of the quality of eggs which are produced and marketed under controlled conditions. The quality control factors specified include uniformity in age of laying flocks, constant temperature and humidity levels, and promptness in handling.



TABLE 10.—*Shell eggs: Production and sales by farmers, and volume graded under Federal and Federal-State grading programs, 1940-1962*

Year	Produced on farms <sup>1</sup>	Farm sales use <sup>1</sup>			Graded	Percentage graded <sup>2</sup>
		Commercial hatcheries	Liquid, frozen, and dried	Available for market		
	1,000 cases <sup>3</sup>	1,000 cases <sup>3</sup>	1,000 cases <sup>3</sup>	1,000 cases <sup>3</sup>	1,000 cases <sup>3</sup>	Percent
1940	110, 297	3, 640	6, 114	77, 013	3, 322	4. 31
1941	116, 372	4, 594	11, 251	78, 074	5, 055	6. 47
1942	135, 028	5, 368	26, 936	80, 899	4, 647	5. 74
1943	151, 519	6, 611	32, 560	90, 604	6, 694	7. 39
1944	162, 603	5, 325	41, 441	93, 406	13, 696	14. 66
1945	156, 169	6, 616	18, 175	109, 556	9, 307	8. 50
1946	155, 450	5, 199	21, 019	107, 526	14, 096	13. 11
1947	153, 844	5, 212	18, 199	110, 003	11, 334	10. 30
1948	152, 497	5, 214	13, 390	114, 460	15, 129	13. 22
1949	155, 983	6, 085	15, 671	115, 138	12, 804	11. 12
1950	163, 761	6, 202	18, 578	120, 187	15, 507	12. 90
1951	161, 286	7, 217	10, 614	126, 216	14, 232	11. 28
1952	161, 300	6, 927	9, 927	127, 615	16, 291	12. 76
1953	160, 808	7, 270	10, 682	127, 073	13, 831	10. 88
1954	163, 703	7, 230	12, 102	128, 768	17, 442	13. 54
1955	165, 350	7, 413	11, 778	130, 851	24, 529	18. 74
1956	169, 758	8, 333	12, 074	134, 937	26, 684	19. 78
1957	169, 517	8, 240	12, 331	135, 465	29, 220	21. 57
1958	171, 130	9, 413	12, 172	137, 026	30, 158	22. 01
1959	175, 930	9, 180	17, 755	137, 173	30, 053	21. 91
1960	170, 808	9, 467	14, 746	136, 090	30, 158	22. 16
1961	172, 006	10, 140	16, 133	136, 394	31, 875	23. 37
1962 <sup>4</sup>	174, 961	10, 333	16, 070	140, 111	34, 516	24. 63

<sup>1</sup> Compiled from statistics of Statistical Reporting Service.

<sup>2</sup> Percentages of sales available for market.

<sup>3</sup> A case contains 30 dozen eggs. (Liquid, frozen, and dried, computed on a shell egg equivalent basis.)

<sup>4</sup> Preliminary.

TABLE 11.—*Shell eggs: Production and sales by farmers, and shell eggs officially graded, by States*

ANNUAL 1962

State and Division	Eggs produced	Eggs sold	Eggs officially graded
	<i>Cases</i>	<i>Cases</i>	<i>Cases</i>
Maine.....	2, 236, 111	2, 213, 889	197, 868
New Hampshire.....	916, 667	908, 334	164, 017
Vermont.....	452, 778	433, 333	-----
Massachusetts.....	1, 644, 445	1, 633, 333	879, 911
Rhode Island.....	216, 667	213, 889	17, 660
Connecticut.....	1, 983, 333	1, 969, 445	159, 955
New York.....	4, 944, 444	4, 808, 333	989, 029
New Jersey.....	5, 177, 778	5, 152, 778	758, 422
Pennsylvania.....	8, 894, 444	8, 672, 222	506, 060
North Atlantic.....	26, 466, 667	26, 005, 556	3, 672, 922
Ohio.....	6, 847, 222	6, 577, 778	3, 633, 163
Indiana.....	6, 344, 444	6, 141, 666	1, 470, 269
Illinois.....	6, 341, 667	6, 027, 778	878, 926
Michigan.....	3, 683, 333	3, 497, 222	632, 217
Wisconsin.....	5, 369, 444	5, 075, 000	1, 540, 237
East North Central.....	28, 586, 110	27, 319, 444	8, 154, 812
Minnesota.....	9, 116, 667	8, 719, 444	4, 930, 259
Iowa.....	12, 311, 111	11, 791, 667	5, 091, 465
Missouri.....	4, 836, 111	4, 408, 333	574, 039
North Dakota.....	1, 177, 778	1, 033, 333	37, 371
South Dakota.....	4, 408, 334	4, 238, 889	857, 125
Nebraska.....	4, 508, 333	4, 233, 333	1, 042, 583
Kansas.....	3, 072, 222	2, 808, 333	46, 792
West North Central.....	39, 430, 556	37, 233, 332	12, 579, 634
Delaware.....	355, 556	347, 222	-----
Maryland.....	750, 000	702, 778	244, 152
Virginia.....	3, 077, 778	2, 800, 000	1, 057, 634
West Virginia.....	950, 000	850, 000	( <sup>1</sup> )
North Carolina.....	6, 400, 000	5, 944, 444	743, 908
South Carolina.....	2, 633, 333	2, 450, 000	144, 031
Georgia.....	7, 175, 000	6, 930, 556	422, 110
Florida.....	3, 402, 778	3, 352, 778	79, 631
District of Columbia.....	-----	-----	744, 412
South Atlantic.....	24, 744, 445	23, 377, 778	3, 435, 878
Kentucky.....	2, 369, 444	1, 938, 889	1, 155
Tennessee.....	2, 575, 000	2, 155, 556	96, 541
Alabama.....	4, 627, 778	4, 361, 111	393, 670
Mississippi.....	4, 183, 333	3, 883, 333	1, 147, 333
Arkansas.....	4, 227, 778	3, 975, 000	184, 099
Louisiana.....	1, 419, 444	1, 241, 667	232, 022
Oklahoma.....	1, 555, 556	1, 302, 778	14, 674
Texas.....	7, 116, 667	6, 669, 444	1, 671, 658
South Central.....	28, 075, 000	25, 527, 778	3, 741, 152

See footnotes at end of table.

TABLE 11.—*Shell eggs: Production and sales by farmers, and shell eggs officially graded, by States—Continued*

ANNUAL 1962

State and Division	Eggs produced	Eggs sold	Eggs officially graded
	<i>Cases</i>	<i>Cases</i>	<i>Cases</i>
Montana.....	550, 000	466, 667	28
Idaho.....	716, 667	644, 444	397
Wyoming.....	158, 333	130, 556	-----
Colorado.....	788, 889	705, 556	674, 980
New Mexico.....	436, 111	408, 333	86, 458
Arizona.....	444, 444	436, 111	11, 456
Utah.....	830, 556	800, 000	754
Nevada.....	33, 333	27, 778	-----
Washington.....	2, 927, 778	2, 836, 111	593, 686
Oregon.....	1, 586, 111	1, 511, 111	38, 015
California.....	19, 186, 111	19, 083, 333	1, 526, 053
Western.....	27, 658, 333	27, 050, 000	2, 931, 827
United States.....	174, 961, 111	166, 513, 888	34, 516, 225

<sup>1</sup> West Virginia reported under Virginia.

NOTE.—A case contains 30 dozen eggs or 360 eggs.

Interior quality of such eggs is measured by a test which involves breaking representative samples and measuring the height of the thick albumen. The system for rating the quality of the egg is on a "Haugh unit" basis, which is a numerical value used to classify eggs according to the height of the albumen in relation to the weight of the egg. A sample of 5 or 10 eggs is tested weekly from each flock on the Quality Control Program.

These Haugh unit values are recorded and averaged on a weekly basis, and a moving average of the last four weekly averages is computed. To be eligible for the quality control program, eggs from each flock must maintain a moving average of 74 Haugh units or higher for the "Fresh Fancy Quality" or AA Grade, and 62 Haugh units or higher for the A Grade, and the yolks must have a well-rounded appearance and reasonably uniform color.

The satisfaction shown by those participating in the program has been reflected by the increase in its use since its inception in 1959. The program combines the definite advantages of offering a high-quality uniform pack of eggs measured by an objective method, and the adaptability for use with modern mechanized methods of egg handling.

The egg grading program is described in detail in the Regulations Governing the Grading of Shell Eggs and the United States Standards, Grades, and Weight Classes for Shell Eggs, 7 CFR, Part 56.

### Federal-State Grade Labels

Eggs may be marketed in accordance with USDA grade, either in cases or in cartons. When cartoned eggs are officially graded, the grade mark is printed on the carton or on a label used to seal the carton. The U.S. grade, weight or size, date of grading and plant number are indicated within the grade mark, on the tape used to seal the carton, or on the carton. When the grade mark is printed on a tape used to seal the carton automatically, the size or weight class of the product may be shown on the main panel of the carton, rather than

within the grade mark, and in such instances the form of the grade mark is as indicated in figure 3.

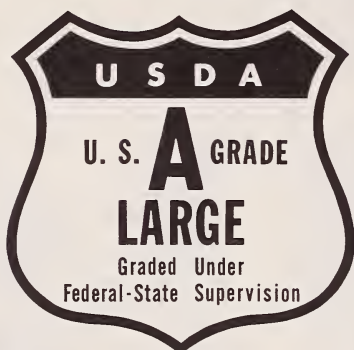


FIGURE 2.—Official grade mark for cartons or seals on cartons holding 1 dozen eggs. BN-4296

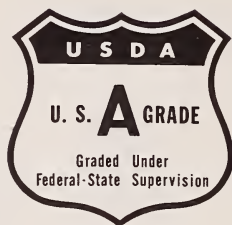


FIGURE 3.—Official grade mark for use on carton seals when size is shown on carton. BN-8680

The Federal-State “Quality Control” egg grading program permits the use of either the Fresh Fancy Quality label or the U.S. Grade AA shield on top quality eggs (fig. 4).

Eggs meeting the standards of U.S. Grade A quality also may be marketed under the controlled quality program. Whichever grade shield is used—Fresh Fancy Quality, U.S. Grade AA, or U.S. Grade A—it may be accompanied by the boxed statement: “Produced and Marketed under Federal-State Quality Control Program.”

Cartons carrying the “Fresh Fancy Quality” grade mark must also show the size of the eggs, on the basis of U.S. official egg sizes, and a “pull” date of not more than 10 days from the date of testing, excluding day of testing. The “pull” date is when the carton must be removed from retail sale. This assures customers of receiving the quality of eggs specified.

The U.S. grade mark, whether it appears on a carton or on a case of eggs, gives the consumer an assurance of the quality as stated. It also helps consumers to judge relative values more accurately and also to adapt their purchases to appropriate uses, thereby getting more for their money.



**PRODUCED and MARKETED  
under FEDERAL - STATE  
QUALITY CONTROL PROGRAM**



**PRODUCED and MARKETED  
under FEDERAL - STATE  
QUALITY CONTROL PROGRAM**

FIGURE 4.—Either the “Fresh Fancy Quality” shield (left) or the “U.S. Grade AA” shield (right) may be used on cartons or seals to identify eggs marketed under the quality control program. BN-8681, BN-20751



Private institutions, such as hotels, hospitals, and steamship lines, can be assured of getting the quality, size, and class of eggs they desire by using the acceptance type of Federal-State grading service. This type of service is available in every State except Alaska. Arrangements may be made for acceptance type of service by applying to USDA poultry grading offices located in any of the larger cities.

Buyers can have their egg purchases inspected according to their specific requirements. Where poultry and eggs are bought on a contract basis each case is stamped to show that the delivery is acceptable. An example of an acceptance stamp is shown at right in figure 5.



FIGURE 5.—Official mark to indicate acceptance under institutional purchase contracts. BN-16855

## PART II

### EGG PRODUCTS

One of the best ways of preparing eggs for large volume users is by removing the contents from the shell and preserving the whites, yolks, or mixtures of the two by freezing or drying. Frozen eggs and dried eggs have certain advantages over shell eggs for manufacturing use, especially in large-scale production. Shell eggs are bulky and fragile, and require careful handling when packing for shipment and storage. Shell eggs are also perishable, even under good storage conditions. When frozen or dried, they provide the manufacturer with a more uniform product, which is compact and may be held with much less deterioration.

### Need for Standardization

In the early days of the frozen egg industry, the canning of eggs served as a means of disposing of eggs unsuitable for shipment and storage as shell stock; that is, dirty, cracked, thin-shelled, or under-sized eggs. Although the development of the freezing process offered a byproduct outlet for eggs which otherwise were nearly a total loss, the use of poor-quality breaking stock prepared under unsanitary conditions retarded early progress of the industry.

The U.S. Bureau of Chemistry, in 1916, was probably responsible for starting this industry on its way to success by setting rigid standards of inspection. In 1939, the Federal Food and Drug Administration established standards of identity for egg products.

During and following World War II, the U.S. Department of Agriculture purchased considerable quantities of dried eggs on the basis of percent solids, percent fat, and solubility and palatability scores. The armed services, as well as many of the large commercial users, have their own purchase specifications for frozen and dried eggs.

The U.S. Department of Agriculture had not issued standards and grades for egg products at the time of publication of this bulletin,

although numerous studies and conferences had been devoted to the development. Industry opinions were that there are numerous problems in the field of production, distribution, and particularly functional performance, which warrant additional research before standards and grades are issued.

One difficulty in setting up standards which are fair and workable for the processor and agreeable to the purchaser is that frozen and dried eggs have many "intangible" quality factors and functional properties which are difficult to specify in a manner that would meet the needs of all users. Other frozen foods have normal color, defects, and characteristics which can be more readily seen or counted.

A problem exists as to what would be an acceptable bacterial count for each of the various frozen or dried egg products, considering the variable requirements of the different users. There are also differences of opinion as to what quality factors should be considered in standards and what their economic significance is.

## Inspection Program

For many years, the Poultry Division in USDA's Agricultural Marketing Service has consulted with the poultry industry on USDA's inspection services which regulate sanitary practices and operating procedures in egg processing plants. Official certification is provided by USDA on that basis.

When plants manufacture and package egg products under the continuous supervision of a USDA-licensed Federal-State inspector, the entire processing operation is checked for adequacy of facilities, sanitation of equipment and operating procedures, types of raw material (breaking stock) used, and the finished egg products. When the inspection service is used in plants that manufacture egg products, the "Regulations Governing the Grading and Inspection of Egg Products" are applicable.

The production of liquid egg processed in approved plants under continuous Federal supervision in 1962 totaled 479,447,546 pounds,

TABLE 12.—*Volume of liquid egg processed in approved plants under Federal supervision, by years, 1951-62*

Year	Production <sup>1</sup>	Under Federal supervision	Percentage supervised
	<i>1,000 pounds</i>	<i>1,000 pounds</i>	<i>Percent</i>
1951-----	408, 654	285, 337	69. 82
1952-----	382, 394	241, 558	63. 17
1953-----	411, 274	272, 762	66. 32
1954-----	465, 931	325, 895	69. 94
1955-----	453, 435	349, 602	77. 10
1956-----	464, 855	341, 349	73. 43
1957-----	474, 730	346, 590	73. 01
1958-----	480, 798	354, 732	73. 78
1959-----	701, 320	528, 684	75. 38
1960-----	582, 466	467, 169	80. 20
1961-----	634, 919	543, 455	85. 59
1962-----	634, 764	489, 529	77. 12

<sup>1</sup> Compiled from statistics of Statistical Reporting Service.

which was approximately 77 percent of the total production. There were over 100 processors using the resident inspection service for egg products in 1962. Table 12 gives the volume of liquid egg processed and the volume under Federal supervision for the years 1951 to 1962.

The USDA has laboratory facilities available to perform various examinations on egg products. Laboratory examinations for palatability, color, solids, fat, bacteriological analysis, whip test, and others are available at a nominal cost to the users of this service.

## **Summary of Plant Facilities and Operating Requirements**

There are four important considerations in the production of satisfactory egg products. They are: (1) wholesome breaking stock; (2) temperature control; (3) sanitation; and (4) chemical changes. The Regulations Governing the Grading and Inspection of Egg Products, issued by the Poultry Division of the Agricultural Marketing Service, cover the minimum requirements in detail.

Only eggs suitable for human consumption may be incorporated in the frozen or dried egg products produced under USDA supervision. The eggs are examined to remove inedible and other unsuitable eggs. Each acceptable shell egg must be broken in a satisfactory and sanitary manner and inspected for wholesomeness by smelling the shell or the egg meat and by visual examination at the time of breaking. All egg meat is reexamined by a licensed inspector before being emptied into the tank or churn. Each step in the further processing of the egg product is under the supervision of the licensed Federal-State inspector.

Temperature controls are necessary at all points in the production of egg products. Also vital are provisions governing sanitation in the operating procedures, facilities (including the grounds around the plant), building construction, equipment, and toilet facilities. These rules are required to minimize bacterial growth and maintain quality control through all stages of production.

The kind of metals used which come in contact with the product and the cleaning agents used must be such that chemical changes in the product are prevented. Regularity of cleaning equipment is required.

## **Labeling**

Plants operating on a voluntary basis as official plants under Government supervision may have their products identified with the official inspection mark (fig. 6), or by an official mark of rectangular design (fig. 7), depending on the type of shell eggs broken for the preparation of the products.

The official plant may request a certificate on an individual lot of their product for any specific factor that a purchaser may request. A nominal charge is made for each type of examination.

Labels on which official identification appears must be approved. The label must contain the common or usual name of the product and the name and address of the packer or distributor. When the name of the distributor is shown, it must be qualified by such term as "packed for," "distributed by," or "distributors." The label also



must bear the lot number and a statement of the net contents of the container. If the product is comprised of two or more ingredients, the ingredients must be listed, and listed in the order of descending proportions.



FIGURE 6.—The official inspection mark. BN-17091



FIGURE 7.—An official mark of rectangular design. BN-20750

### PART III

## ADMINISTRATION OF PROGRAMS

All grading and inspection work on poultry and eggs and their products is administered by the Poultry Division of USDA's Agricultural Marketing Service.

The Poultry Division consists of a Program Analysis Group, an Inspection Branch, a Grading Branch, and a Standardization and Marketing Practices Branch. The Standardization and Marketing Practices Branch is responsible for developing regulations, standards and grades which are administered by the Inspection and Grading Branches.

While the responsibility lies primarily with the Standardization and Marketing Practices Branch, the Poultry Division, through the Director's office, is constantly working toward the development of program aids for training graders to recognize quality factors in poultry and eggs and their products. A home economist is employed to develop educational material for consumers. This Branch also develops standards for poultry and egg containers and carries on work to encourage improved marketing practices.

The Poultry Division maintains four area offices—located in Philadelphia, Chicago, Des Moines, and San Francisco—for supervising the work of grading at the field level. In each office, there is an Area Supervisor for Grading and, varying with the workload, Assistant Area Supervisors. These technical people work with Federal-State employees in the field directly and through Federal-State Supervisors.



## Area Supervisors—Poultry and Egg Grading

(1) WESTERN AREA:

Room 203,  
180 New Montgomery Street,  
San Francisco, Calif. 94105  
Phone: 986-3500, X-3494 and 3495.

*States supervised:* Alaska, Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming.

(2) EAST MIDWEST AREA:

Room 803, U.S. Customs House;  
610 South Canal Street,  
Chicago, Ill. 60607  
Phone: 828-6226, 828-6227, and 828-6228.

*States supervised:* Alabama, Arkansas, Illinois, Indiana, Kentucky, Louisiana, Michigan, Mississippi, Missouri, Ohio, Tennessee, Wisconsin.

(3) WEST MIDWEST AREA:

Room 503, Iowa Building,  
Des Moines, Iowa 50309  
Phone: 243-2171, X-474 and 475.

*States supervised:* Colorado, Iowa, Kansas, Minnesota, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas.

(4) EASTERN AREA:

Room 1006, Customs Building,  
2d and Chestnut Streets,  
Philadelphia, Pa. 19106  
Phone: Market 7-6000, X-482 and 483.

*States supervised:* Connecticut, Delaware, Florida, Georgia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Vermont, Virginia, West Virginia.

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AGRICULTURAL MARKETING SERVICE  
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